



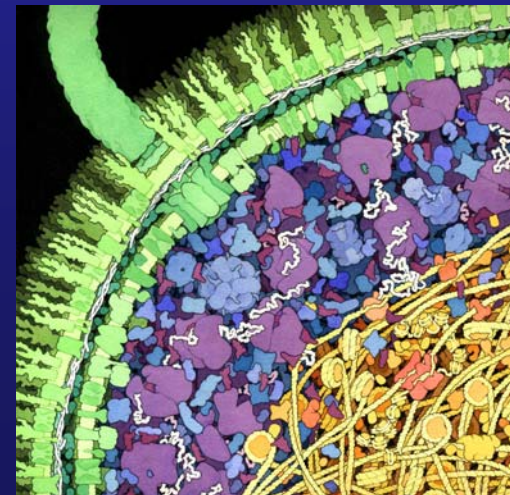
NANOMEDICINE ROADMAP INITIATIVE

RFA Information Meeting

Email questions: Nanomed@nih.gov

Include “Nanomed Info” in subject line

NIH, Masur Auditorium, Bldg 10
Bethesda, MD
Friday, January 27, 2006
8AM – 1PM EST



Nanomedicine Development Centers (NDC)

NIH National Collaborative Network

Center for Mechanical Biology
Columbia University

Engineering Cellular Control: Synthetic Signaling and Motility Systems
University of California San Francisco

Center for Protein Folding Machinery
Baylor College of Medicine

National Center for Design of Biomimetic Nanoconductors
University of Illinois Urbana-Champaign

Agenda

Overview of NIH Roadmap for Medical Research

Nanomedicine Initiative - Vision and Goals

Nanomedicine Development Center Presentations

--- Break ---

Nanomedicine Program Description and RFA

Open Discussion

Nanomedicine Development Centers (NDC)

Program Development (2003)

- Nanomedicine Designated as a Roadmap Initiative
- Vision and Goals
- Project Team formed

NIH Roadmap Nanomedicine Initiative Project Team

David Balshaw, PhD, **NIEHS**

*John Bowers, PhD; **CSR**

*Dennis Buxton, PhD; **NHLBI**

*German Cavelier, PhD, **NIMH**

*Richard Fisher, PhD; **NEI**

*Daniel Gallahan, PhD; **NCI**

*William Heetderks, MD; **NIBIB**

*Eleni Kousvelari, DDS, DSc; **NIDCR**

Catherine Lewis, PhD; **NIGMS**

*King Li, MD; **CC**

Joseph Pancrazio, PhD; **NINDS**

*Allison Peck, MS, **NHGRI**

*Karen Peterson, PhD; **NIAAA**

*Jeffery Schloss, PhD; **NHGRI**

Paul Sieving, MD, PhD; **NEI**

*Kuan Wang, PhD; **NIAMS**

Administrative Institute: National Eye Institute

Nanomedicine Development Centers (NDC)

Program Development (2004): **Flexible Research Authority**

- Maximize rapid program development and success
- Improved, extensive consultation with research community during planning
- Flexibility in peer review
- Flexible award management and resource allocation

Nanomedicine Development Centers (NDC)

Program Development (2004): Planning Process

- RFA developed for planning grants
- 81 concept “white papers” received (5 pages)
- 20 planning awards (PN1) – Sept 2004

Nanomedicine Topics

Molecular motors

Cell Motility

Mitosis

Cytoskeleton

RNA synthesis

DNA repair

Cell signaling

Nanofabrication

Protein folding

Membrane physiology

Molecular aggregation

Immunomodulation

Mechanotransduction

Physical factors and cell function

Intercellular communication

Bioengineering principles in cells

Supramolecular cell compartments

Nanomedicine Development Centers (NDC)

Program Development (2005): Planning Process

Sept 2004 - 20 planning awards (PN1)

- Mar 2005 – Concept meeting
 - PN1 recipient teams
 - NIH staff
 - Advisory Panel
- April – Notice of Limited Competition
- May – Instructions to PN1 teams
- Sept – Four NDCs awarded (PN2)

Nanomedicine Development Centers (NDC)

Features of NDCs:

- Multidisciplinary
- Unique
 - model systems and medical targets
 - approaches
 - personnel mix
 - resources
- Collaborative – with other NDC and NIH Staff
- Optimize resources

Nanomedicine Development Centers (NDC)

Program Budget (\$ in millions):

2004	1.5	
2005	6	4 NDCs
2006	12	2, 3 or 4 more NDCs
2007	12	
2008	25	
2009	25	
2010	12	

2006 and later values are anticipated based on programmatic priorities and availability of funds

Nanomedicine Development Centers (NDC)

2006 RFA: Timeline and Features

Jan 26	RFA published NIH Guide
Mar 15	Concept Approval Letter due (5-page)
April 17	Approval Notification
June 23	Application for NDC award due
Jul – Aug	Review
Sept	NDC awards

Concept Approval Letter (due Mar 15)

- Provide NIH staff and external consultants an overview of proposed vision, goals, and approaches.
- Timesaver for applicants and staff
- Suggested format and content in RFA
- 5 pages + references
- Submit as PDF by email
- Evaluated by NIH staff and extramural advisors
- **Applicants notified by email on April 17**

Concept Approval Letter (due Mar 15)

- Develop short and long-term vision that addresses the challenges and goals of the NIH initiative.
- Goals and Approaches
- Nanomedicine: Unique and Distinct
- Collaborators and scientific and medical disciplines required to meet your challenges
- Innovative and bold, “out-of-the-box” thinking

Concept Approval Letter (due Mar 15)

Evaluation - NIH staff and outside advisory panel

- Justification of model systems
- Tools to be applied and developed
- Clarity of vision and shortcomings of current capabilities
- Approach to generalizing results
- Anticipated design principles
- Approach to integrating with ongoing efforts and existing resources
- Analysis of collaborative needs and interactions
- Complementary to existing NDCs

Concept Approval Letter (due Mar 15)

- Strength of the Investigative team
- New studies and directions will be attempted to meet the Nanomedicine challenges
- Attempt to move from fundamental measurements to using engineering principles to solve medical problems
- Multidisciplinary teams are truly integrated, dedicated and unified to collaborate within NDC and within network
- Willingness to take risk, forward thinking, understand that out-of-the-box thinking may fail
- Vision of intracellular control and manipulation
- Nanomedicine not nanotechnology

NDC Application (due June 23)

Prior Concept Approval Notification - April 17

Not a PPG – assembly of individual projects

Research Plan = 35 pages (max)

Organization and Network = 5 pages

NDC Application (due June 23)

Concept Approval Notification - April 17

- Introduction, Vision, Background, Significance
- Published Work, Studies in Progress, and Research Expertise
- New Studies and New Directions
- Center and Network Organization
Resources
Key personnel
Complement other NDCs

NDC Application (due June 23)

Concept Approval Notification - April 17

Additional Review Criteria (July – Aug Review)

- Something new not otherwise achievable?
- Beyond expansion of ongoing work?
- Multidisciplinary approach?
- New measurement capabilities?
- Leadership? Track record?
- Medical relevance
- Complement existing NDCs; add value to network
- Engineering principles
- Novel measurements & manipulations in living cells

NDC Awards (Sept 2006)

Award Management

- Collaborative interaction with NIH Staff and SAP
- NDC Leadership evaluation and resource flexibility
- Base \$1.2 million/ year
- 15% set-aside funds
 - competitive
 - network resources
 - new collaborative projects
 - new studies
 - scientific needs that arise
- Anticipated program funds double in 2008

Nanomedicine Development Center (PN2)

www.nih.gov

Select: NIH Roadmap
and then: Nanomedicine

or Search: NIH Guide